

WHAT IS CLAIMED IS:

1. An image retrieving method for providing images as the results of retrieval, comprising the steps of:

prompting a user to select one attribute information or a plurality of attribute information items from attribute information items prepared in advance and to assign the selected attribute information to a designated area; and

retrieving images, which have area-attribute information produced using the attribute information in combination with information specifying the area, from an image database and providing the retrieved images.

2. A retrieving method for providing images as the results of retrieval, comprising the steps of:

detecting corresponding areas within retrieved images in which attribute information common to the retrieved images is found; and

displaying the detected corresponding areas within the images in corresponding areas on an output display means on which the images are displayed or represented.

3. An image retrieving method according to Claim 1, wherein a range of retrieval is changed by performing any of the following manipulations:

a manipulation of narrowing the range of retrieval by assigning one attribute information or a plurality of attribute information items to one area or a plurality of areas to which attribute information has not been assigned; a manipulation of narrowing the range of retrieval by adding one attribute information or a plurality of attribute information items to one area or a plurality of areas to which attribute information has already been assigned;

a manipulation of expanding the range of retrieval by deleting one attribute information or a plurality of attribute information items from one area or a plurality of areas to which attribute information has already been assigned;

a manipulation of narrowing the range of retrieval by assigning the same attribute information or attribute information items as one attribute information or a plurality of attribute information items, which is found in one area or a plurality of areas to which attribute information has already been assigned, to another area or another plurality of areas;

a manipulation of changing the range of retrieval by changing the assignee of one attribute information or a plurality of information items, which is found in one area or a plurality of areas to which attribute information has already been assigned, into another area or another plurality of areas; and

a manipulation of changing the range of retrieval by changing one attribute information or a plurality of attribute information items, which is found in one area or a plurality of areas to which attribute information has already been assigned, into another attribute information or another plurality of attribute information items.

4. An image retrieving method according to Claim 1 or 3, wherein when a line, a shape, or a texture is drawn on an area specifying means that is used to assign attribute information to a designated area, attribute information representing the line oriented in the direction of drawing or attribute information representing the shape or texture is added to attribute information concerning an area within an image to be produced which corresponds to the area on the area specifying means in which the line, shape, or texture has been drawn.

5. An image database creating method for a database of image attribute information used to retrieve an image, comprising the steps of:

dividing an image into a plurality of areas, extracting image features from each area, and providing the image features as attribute information;

producing area-attribute information using the attribute information in combination with information specifying the area; and

recording the area-attribute information in a database in association with the image.

6. An image retrieving device comprising:

an attribute selecting means for selecting attribute information concerning an image area;

an area specifying means for assigning the attribute information to a designated area;

an area-attribute information database in which area-attribute information produced using the attribute information in combination with information specifying the area is recorded;

an image database in which image data to be provided is recorded;

an image retrieving means for retrieving images that have attribute information, which is selected by said attribute selecting means, found in the areas thereof corresponding to the area designated by said area specifying means; and

a means for displaying the retrieved images.

7. A retrieving device for providing images as the results of retrieval, comprising:

a common area-attribute detecting means for detecting corresponding areas within retrieved images in which attribute information common to the retrieved images is found; and

an image area displaying means for displaying or representing the corresponding areas within the retrieved areas in an area corresponding to the corresponding areas detected by said common area-attribute detecting means.

8. A retrieving device according to Claim 7, wherein images selected by an image retrieving means are synthesized to produce a synthetic image, and an area within the synthetic image is displayed.

9. A retrieving device according to Claim 7, wherein areas within images retrieved by an image retrieving means are displayed while being sequentially switched.

10. An image database creating device for creating a database of image attribute information used to retrieve images, comprising:

a feature extracting means for dividing an image into a plurality of areas, extracting image features from each area, and providing the image features as attribute information; and

an attribute recording means for producing area-attribute information using the attribute information in combination with information specifying the area, and recording the area-attribute information in a database in association with the image.

11. An image database creating device according to Claim 10, wherein an image is displayed, any symbol or keyword is assigned to one area or a plurality of areas within the image, the symbol or keyword is combined with information specifying the area, and the resultant

information is treated as area-attribute information set forth in Claim 1.

12. A retrieving service for providing images in compliance with a user's request for retrieval, wherein:

a user is provided with an attribute selecting means for use in selecting attribute information and an area specifying means for use in designating an area;

the user is prompted to assign one attribute information or a plurality of attribute information items, which is selected from attribute information items prepared in advance, to a designated area; and

images having area-attribute information produced using the attribute information in combination with information specifying the area are retrieved from an image database and presented to the user.

13. A retrieving service for providing images in compliance with a user's request for retrieval, wherein:

corresponding areas within retrieved images in which attribute information common to the retrieved images is found are detected; and

a synthetic image of the corresponding areas within the retrieved images is displayed or the corresponding areas within the retrieved images are displayed while being sequentially switched.

14. A program instructing a computer to function as an image retrieving device, comprising:

a means for prompting a user to assign one attribute information or a plurality of attribute information items, which is selected from attribute information items prepared in advance, to a designated area;

a means for retrieving images, which have area-attribute information produced using the attribute information in combination with information specifying the area, from an image database; and

a means for providing retrieved images.

15. A program for instructing a computer to function as a database creating device for creating a database of image attribute information used to retrieve an image, comprising:



a means for dividing an image into a plurality of areas, extracting image features from each area, and providing the image features as attribute information;

a means for producing area-attribute information using the attribute information in combination with information specifying the area; and

a means for recording the area-attribute information in a database in association with the image.

1. a means for dividing an image into a plurality of areas, extracting image features from each area, and providing the image features as attribute information;

2. a means for producing area-attribute information using the attribute information in combination with information specifying the area; and

3. a means for recording the area-attribute information in a database in association with the image.